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Effectiveness of planned teaching programme on knowledge and practice regarding prevention of coronary artery disease among patients with modifiable risk factors of coronary artery disease in NMCH hospital Sasaram Bihar

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Abstract
Coronary artery disease (CAD) is a leading cause of mortality globally, driven by an interplay of modifiable risk factors such as aging, lifestyle changes, and unhealthy diets. In developing countries like India, the rapid rise in CAD cases calls for urgent preventive measures. CAD, often referred to as arteriosclerosis or atherosclerosis, occurs when plaque builds up in the arteries, narrowing them and restricting blood flow to the heart. This can result in chest pain, heart attacks, arrhythmias, and heart failure. The burden of CAD is substantial, especially among middle-aged adults, and its prevention is critical. The study aims to assess the effectiveness of a planned teaching program focused on the prevention of CAD among patients with modifiable risk factors. By evaluating the pre-test and post-test knowledge and practices regarding CAD prevention, this research will explore the impact of educational interventions on improving patient outcomes. Results are expected to demonstrate a significant improvement in both knowledge and practices related to CAD prevention.

Keywords: Regarding prevention of coronary artery disease among patients with modifiable risk factors of coronary artery disease

Introduction
Coronary artery disease should now be considered an important public health problem due to epidemiological transition characterized by changing lifestyles and a problem related to interplay of factors with regards to their existence, casualty and attributes. The epidemiological factors like ageing and changing lifestyles, which culminate in an epidemic of non-communicable disease is rapidly occurring in the developing countries.
Coronary artery disease is also called Coronary arteriosclerosis, Coronary atherosclerosis. Coronary artery disease is the most common type of heart disease. It is the leading cause of death in the United States in both men and women. Coronary artery disease happens when the arteries that supply blood to heart muscle become hardened and narrowed. This is due to the build-up of cholesterol and other material, called plaque, on their inner walls. This build-up is called atherosclerosis. As it grows, less blood can flow through the arteries. As a result, the heart muscle can't get the blood or oxygen it needs. This can lead to chest pain (angina) or a heart attack. Most heart attacks happen when a blood clot suddenly cuts off the hearts' blood supply, causing permanent heart damage. Over time, Coronary artery disease can also weaken the heart muscle and contribute to heart failure and arrhythmias. Heart failure means the heart can't pump blood well to the rest of the body. Arrhythmias are changes in the normal beating rhythm of the heart.

Need for study
In today's world, most deaths are attributable to non-communicable diseases, 32 million and just over half of these, 16.7 million are as a result of CHD.

More than one third of these deaths occur in middle aged adults. In developed countries heart disease is the first cause of death for adult men and women.

Dr. V.K Bahl (AIIMS, Delhi) says, “It is estimated by the year 2020, India will have the largest cardiovascular burden in the world” and among Indians coronary heart diseases tend to occur earlier in life than in any other ethnic group.

In a study conducted on HDL- a molecule with a multi-faceted role in coronary artery disease, High density lipoprotein cholesterol (HDL-C) is popularly known as "good cholesterol" due to its ability to protect against atherosclerosis. High Density Lipoprotein (HDL) is best known as a key player to promote efflux of cholesterol from cells and promote reverse cholesterol transport (RCT) which decreases the accumulation of foam cells in arterial walls. Several roles of HDL discovered recently include anti-oxidant effect, anti-inflammatory role, anti-thrombotic role, all of which potentiate the athero-protective role of HDL. Besides reverse cholesterol transport, the antioxidant and anti-inflammatory properties of HDL may also play a major role in protection against development of atherosclerosis. Two different scales define the athero-protective effects of HDL- quantity of HDL-C (measured in mg/deciliter or mmol/L) is inversely correlated with cardiovascular risk, the other is the quality or 'functionality' of HDL. (Arora S, Patra SK, Saini R, 2023)

Objectives of the stud

- To assess the pre test and post test level of knowledge regarding prevention of coronary artery disease among patients with modifiable risk factors of Coronary artery disease.
- To assess the pre test and post test level of practice regarding prevention of coronary artery disease among patients with modifiable risk factors of Coronary artery disease.
- To assess effectiveness of planned teaching programme regarding prevention of coronary artery disease among patients with modifiable risk factors of Coronary artery disease.

Hypothesis

H_1: There may be a significant improvement in the post test level of knowledge and practice regarding prevention of coronary artery disease among patients with modifiable risk factors of Coronary artery disease.

H_2: There will be a significant relationship between post test knowledge and practice score regarding prevention of coronary artery disease among patients with modifiable risk factors of Coronary artery disease.

Research Methodology

Methodology of research organizes all the components of study in a way that most likely will lead to valid answers for the problems that have been posted.

This chapter deals with the methodology adopted for the study. It includes the research approach, research design, variables, setting, population, sample, and criteria for selection of the sample, sample size, sampling technique, development and description of the tool, content validity, pilot study, and reliability of the tool, data collection procedure and plan for data analysis.

Table 1: Frequency and percentage distribution of pretest knowledge score of samples (N=60)

Level of knowledge	Frequency	Percentage	Pre-test mean	Pre-test SD
Good	08	15.01%	15.00	4.75
Average	38	61.71%		
poor	14	23.33%		
Total	60	100%		

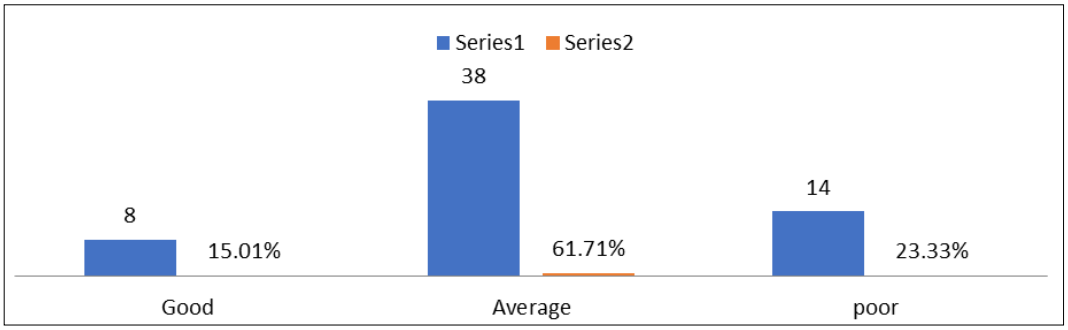

Fig 1: Level of knowledge

Table The above table depicts poor knowledge scored by 08 (15.01%) ranging between1-10, average knowledge score by 38 (61.71%) samples scored average knowledge score ranging between11-20, 08(15.01%) score very good knowledge score ranging between21-30.

Section II

Assessment of post-test knowledge regarding prevention of coronary artery
disease among patients with modifiable risk factors of coronary artery disease. after administration of plan teaching programme

Table 2: Frequency and percentage distribution of post test knowledge score of samples (N=60)

Level of knowledge	Frequency	Percentage	Pre-test mean	Pre-test SD
Good	42	80.00%	23.10	3.60
Average	12	20.00%		
poor	0	0%		
Total	60	100%		

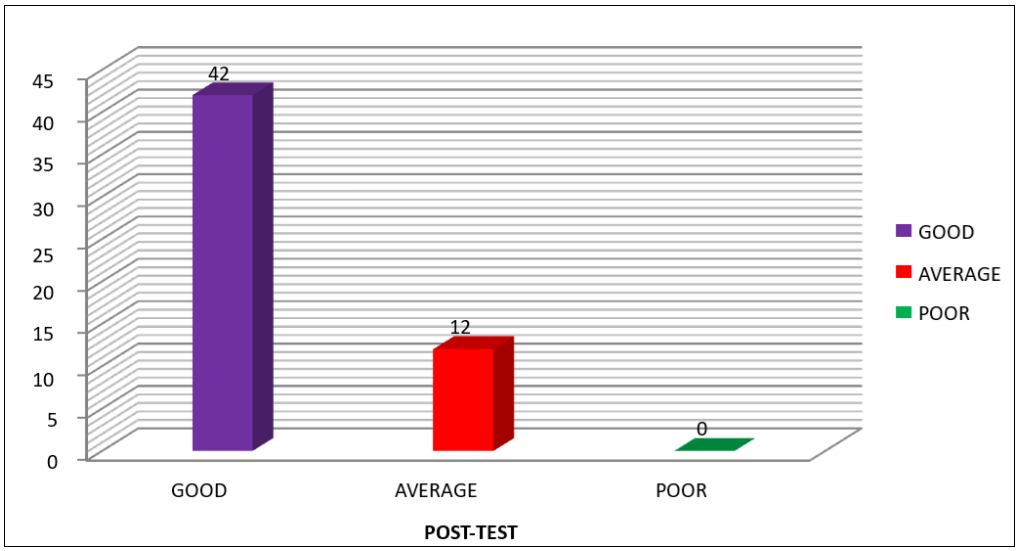

Fig 2: Post-Test Knowledge Level Distribution

Table he above table depicts that poor knowledge scored by 0 (0%) ranging between1-10, average knowledge score by 12 (20.00%) samples scored average knowledge score ranging between11-20, 42(80.00%) score very good knowledge score ranging between 21-30.

Section III: To Assess the effectiveness of planed teaching program by comparing pre and post test knowledge score knowledge regarding prevention of coronary artery disease among patients with modifiable risk factors coronary artery disease.

Table 3: Comparison between mean, mean difference, standard deviation and "t" value of Pre-test and post-test knowledge score (N=60)

Knowledge score	Mean	Percentage	Standard deviation	Mean Difference	t" value
Pre-test	15.00	50%	4.7	8.1	24.17
Post-test	23.10	77%	3.60		

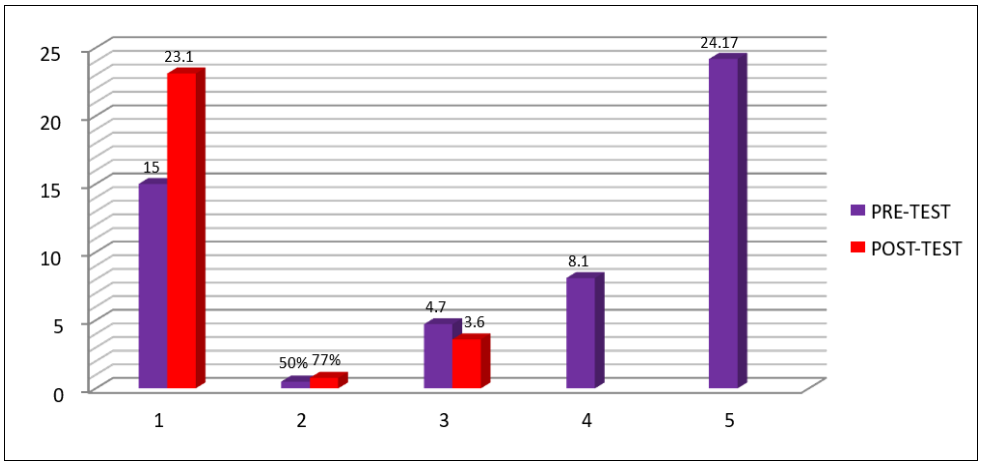

Fig 3: Comparison of Pre-Test and Post-Test Knowledge Scores

Table t value =24.17, P value= 0.01, The data presented in Table no.4.3 shows that the post-test mean knowledge score (77%) is apparently higher than the mean pre-test knowledge score (50%). The dispersion of pre-test score (SD 4.7) it is less than that of the post test scores (SD 3.60).
The Computed "t" value shows that there is a significant difference between pre and post-test knowledge score ("t" = 24.17, P, 0.01 level). In the "t" table the value of „t" is at 0.01 level. Hence, post -test knowledge score is higher than pre-test knowledge score. This indicates that the PTP is effective in increasing knowledge scores among knowledge regarding prevention of coronary artery disease among patients with modifiable risk factors of coronary artery disease.so research hypothesis (H_1) is accepted and null hypothesis (H_0) is rejected.

Summary

This chapter dealt with the analysis and interpretation of data collected with 60 patients in Sanjay Gandhi memorial hospital Rewa. Descriptive and inferential statistics were used for analysis. The Computed „t" value shows that there is a significant difference between pre and post-test knowledge score ("t= 24.17, P, 0.01 level). In the "t" table the value of "t" is at 0.01 level. Hence, post -test knowledge score is higher than pre-test knowledge score. This indicates that the PTP is effective in increasing knowledge scores among knowledge regarding prevention of coronary artery disease among patients with modifiable risk factors of Coronary artery disease the data analysis and findings of this study shows that educating the patients will help them to improve their knowledge regarding coronary artery disease.

Conclusion

The present study assessed the effectiveness of planned teaching programme on knowledge and practice regarding prevention of coronary artery disease among patients with modifiable risk factors. The results revealed that planned teaching programme is very effective in increasing the level of knowledge and practice at *p*< level. From the findings of the study, the investigator concluded that planned teaching programme has an important role in increasing the level of knowledge and practice regarding prevention of coronary artery disease among patients with modifiable risk factors of Coronary artery disease. The researcher insisted the patients with multiple modifiable risk factors of coronary artery disease should seek medical advice and follow up care.

Implications

The implications drawn from the study are of importance to the field of nursing including nursing service, administration, education and research.

Nursing Practice

- The nurse as a service provider should periodically organize and conduct mass education programme on lifestyle modifications among patients with modifiable risk factors of coronary artery disease using appropriately designed audio visual aids.
- The nurse implements the information, education, communication to create aware to the patient on causes and prevention of coronary artery diseases.

Nursing Education

- Nurses must be reinforced in-service education regarding management coronary artery diseases, its prevention, early identification of complications and its management.
- Nursing students have to be educated regarding prevention of coronary artery disease.

Nursing Administration

- The nurse as an administrator should design formal teaching programme on lifestyle modifications coronary artery patients with modifiable risk factors to improve their knowledge.
- Provide opportunities for nurses to attend training programmes.

Nursing Research

- Nurse researchers can promote more research with regard to utilization of different pharmacological agents in the clinical practice.
- Nurse researchers can collaborate with the other health team members in developing evidence based nursing practice.
- Nursing researcher can encourage clinical nurses to apply the research findings in their daily nursing care activities.

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